

## WHAT IS CLAIMED:

1. A method for load balancing a telecommunications switch in a telecommunications system, the switch including a plurality of cards, each having a plurality of ports, each  
5 port being adapted to provide a customer with one or more telecommunications services, the method comprising:

compiling a list of switches, cards and ports available for providing the desired services; and

10 selecting a port for provision of the desired service on the basis of one or more of (a) a loading of ports on the card on which the port under consideration is located, (b) a loading of services on the card, (c) a length of jumper wire necessary to connect the port under consideration to a frame in a telecommunications central office, (d) a cost of  
15 the card on which the port under consideration is located, and (e) selected percentage weighting factors for the respective priorities of (a), (b) and (c).

2. A method according to claim 1, wherein in the compiling step, the list of available switches, cards and ports is  
20 maintained in a table in a database.

3. A method according to claim 1, further comprising soliciting from a user the percentage weighting factors for

the respective priorities of (a), (b) and (c), the weighting factors adding up to 100%.

4. A method according to claim 3, wherein in the selecting step, available cards are analyzed one by one, in decreasing  
5 order of cost, on the basis of (a), (b) and (c).

5. A method according to claim 4, wherein the ports on a switch are divided into one or more switch equipment groups, each switch equipment group is divided into one or more load groups, and each load group is divided into one or more  
10 directory groups, the loading of the ports on a card being determined on a load group basis, and the connection of ports to a frame being effected in units of directory groups.

6. A computer-readable memory medium for controlling a processor-controlled apparatus to load balance a  
15 telecommunications switch in a telecommunications system, the switch including a plurality of cards, each having a plurality of ports, each port being adapted to provide a customer with one or more telecommunications services, the apparatus being controlled to perform a method comprising:

20 compiling a list of switches, cards and ports available for providing the desired services; and

selecting a port for provision of the desired service on the basis of one or more of (a) a loading of ports on the card on which the port under consideration is located, (b) a loading of services on the card, (c) a length of jumper wire necessary to connect the port under consideration to a frame in a telecommunications central office, (d) a cost of the card on which the port under consideration is located, and (e) selected percentage weighting factors for the respective priorities of (a), (b) and (c).

10 7. A computer-readable memory medium according to claim 6, wherein in the compiling step, the list of available switches, cards and ports is maintained in a table in a database.

15 8. A computer-readable memory medium according to claim 6, the method further comprising soliciting from a user the percentage weighting factors for the respective priorities of (a), (b) and (c), the weighting factors adding up to 100%.

20 9. A computer-readable memory medium according to claim 8, wherein in the selecting step, available cards are analyzed one by one, in decreasing order of cost, on the basis of (a), (b) and (c).

10. A computer-readable memory medium according to claim 9, wherein the ports on a switch are divided into one or more switch equipment groups, each switch equipment group is divided into one or more load groups, and each load group is  
5 divided into one or more directory groups, the loading of the ports on a card being determined on a load group basis, and the connection of ports to a frame being effected in units of directory groups.

11. An apparatus adapted to load balance a  
10 telecommunications switch in a telecommunications system, the switch including a plurality of cards, each having a plurality of ports, each port being adapted to provide a customer with one or more telecommunications services, the apparatus comprising:

15 means for compiling a list of switches, cards and ports available for providing the desired services; and

means for selecting a port for provision of the desired service on the basis of one or more of (a) a loading of ports on the card on which the port under consideration is  
20 located, (b) a loading of services on the card, (c) a length of jumper wire necessary to connect the port under consideration to a frame in a telecommunications central office, (d) a cost of the card on which the port under

consideration is located, and (e) selected percentage weighting factors for the respective priorities of (a), (b) and (c).

12. An apparatus according to claim 11, wherein the  
5 compiling means maintains the list of available switches, cards and ports in a table in a database.

13. An apparatus according to claim 11, further comprising a means for soliciting from a user the percentage weighting factors for the respective priorities of (a), (b) and (c),  
10 the weighting factors adding up to 100%.

14. An apparatus according to claim 13, wherein the selecting means analyzes available cards one by one, in decreasing order of cost, on the basis of (a), (b) and (c).

15. An apparatus according to claim 14, wherein the ports on  
15 a switch are divided into one or more switch equipment groups, each switch equipment group is divided into one or more load groups, and each load group is divided into one or more directory groups, the loading of the ports on a card being determined on a load group basis, and the connection of  
20 ports to a frame being effected in units of directory groups.

16. Computer code for controlling a computer to load balance a telecommunications switch in a telecommunications system,

the switch including a plurality of cards, each having a plurality of ports, each port being adapted to provide a customer with one or more telecommunications services, the computer code comprising:

5           code for compiling a list of switches, cards and ports available for providing the desired services; and

          code for selecting a port for provision of the desired service on the basis of one or more of (a) a loading of ports on the card on which the port under consideration is  
10   located, (b) a loading of services on the card, (c) a length of jumper wire necessary to connect the port under consideration to a frame in a telecommunications central office, (d) a cost of the card on which the port under consideration is located, and (e) selected percentage  
15   weighting factors for the respective priorities of (a), (b) and (c).

17.   Computer code according to claim 16, wherein in the code for compiling maintains the list of available switches, cards and ports in a table in a database.

20   18.   Computer code according to claim 16, the code further comprising code for soliciting from a user the percentage

weighting factors for the respective priorities of (a), (b) and (c), the weighting factors adding up to 100%.

19. Computer code according to claim 18, wherein in the code for selecting, available cards are analyzed one by one, in  
5 decreasing order of cost, on the basis of (a), (b) and (c).

20. Computer code according to claim 19, wherein the ports on a switch are divided into one or more switch equipment groups, each switch equipment group is divided into one or more load groups, and each load group is divided into one or  
10 more directory groups, the loading of the ports on a card being determined on a load group basis, and the connection of ports to a frame being effected in units of directory groups.